Are there Irreducibly Relational Facts?

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1 The Question

Supposing that truths require truthmakers, that true propositions are those which correspond to facts, is there a distinctive domain of facts that make true the relational truths? Or is it rather that, if we had collected the facts required to make true the other truths, the non-relational ones, that we would then have enough facts to make all truths true?

If the former is the case, let us say that anti-reductionism about relational facts is true; if the latter, that reductionism about relational facts is true. Let us say that a fact is relational if it makes true some relational proposition (a proposition that asserts that a relation holds between some objects[1]), that it is irreducibly relational if, in addition, it does not make true any non-relational propositions, and that it is monadic if it is not irreducibly relational (if it makes true some proposition that does not assert that a relation holds between some objects).

Anti-reductionism (as we will say for short) holds that there are irreducibly relational facts — reductionism (as we will say for short) that while there may be relational facts, there are no irreducibly relational ones.

This is a very fine definition, but is it an interesting issue? Yes, for three reasons:

1. *Reasons internal to truthmaker theory.* If you are one of those metaphysicians who believes the antecedent of the first sentence of this paper, that truths require truthmakers, you will naturally be interested in what manner of things you are thereby committed to. Different truthmaker theorists offer different ontologies of facts. These ontologies deal with relational facts in different ways, so independent arguments for one or other view of relational facts give us some grip on which truthmaker ontology is likely to be the right one. In particular, irreducibly relational facts could seem nominalistically unrespectable. (Campbell 1990, pp. 97–99)

[1] "Some objects", here, is the logicians' plural: a proposition can be relational if it asserts that a relation holds between some object and itself.

2. *Reasons of general ontology.* If you are not a truthmaker theorist, perhaps you are not because you did not think that your favoured ontology could accommodate irreducibly relational facts. If there are independent arguments for reductionism, though, you need not worry. On the other hand, if there are independent arguments for anti-reductionism, you are thereby furnished with an argument against truthmaker theory.

3. *Reasons of historical interest.* One of the founding moments of analytic philosophy was the throwing off of Hegelian idealism by Bertrand Russell and G.E. Moore around the beginning of the 20th Century. In Russell's case, insofar as he himself reports it, this was due to his realisation of the truth of anti-reductionism about relations. According to the early Russell, most of the evils of British idealism were due to an uncritical acceptance of reductionism. (Russell 1910, pp. 162–169) But perhaps it was Russell who was uncritical?

Before we move onto the arguments for and against reductionism, I'll fill in some necessary background.

A *fact*, as I'll be using that term, is whatever it is that makes a proposition true. I don't take the use of "fact" to imply that facts constitute some *sui generis* ontological category. Facts could be identified with tropes (Fox 1987) (Mulligan et al. 1984), or with 'states of affairs' (Armstrong 1997) — complex entities constructed out of particulars and properties. It's the job of a truthmaker theory to offer and make plausible these kinds of ontological accounts of facts. Nor should facts, in this sense, be regarded as true propositions, for, unless some extreme linguistic idealism is true, synthetic propositions don't make themselves true. "Fact" and "making true" here are technical terms of speculative metaphysics, and aren't intended as analyses of our ordinary language use of "fact".

For purposes of clarity, I will sometimes speak of a fact ascribing a property or relation to an object or objects. This should be understood as shorthand for a fact that makes true some proposition which ascribes that property to that object or objects. In this paper I will be completely neutral on the ontological nature of facts (on whether, for example, they have properties and objects as constituents).

It's because I want to be neutral between the various truthmaker ontologies that I've defined "relational" and "irreducibly relational" in terms of the propositions that a given fact makes true. It would be tempting to define them in terms of the underlying structure of the fact — but since the issue is partly what requirements there are on a theory of that structure, it would be question-begging to presuppose such a structure in defining "relational fact".

Also note that it is possible for a single proposition to be made true by multiple facts. This will regularly be the case for any proposition made true by something smaller than the whole universe, owing to a plausible monotonicity principle — "If X makes p true and X is included in Y, then Y makes p true." (Simons 1992, p. 165) Since everything is included in the universe, the universe makes every proposition true. Only some of the facts (hopefully, only one, and hopefully not the universe) that make a proposition true, will be such that they have no proper parts that make the proposition true. Facts of this kind are called "minimal truthmakers" (Langtry

1975, p. 9) (Mulligan et al. 1984, p. 297–298) Where I speak of "*the* fact that *p*" the single fact I am referring to is the minimal truthmaker of *p*.

Making true is a slightly more contentious concept to pin down. I have argued elsewhere (Parsons 1999, pp. 326–327) that *X* makes *p* true iff *X* is intrinsically such that *p*; to put this another way, a duplicate of *X* cannot exist without *p* being true; yet a third way, *p* cannot become false without a non-Cambridge change in *X*.

Many truthmaker theorists hold, however, that every fact *essentially* makes true all and only those truths that it makes true — a doctrine I call truthmaker essentialism. This leads them to define making true thus: *X* makes *p* true iff *X* is essentially such that *p*; to put this another way, a counterpart of *X* cannot exist without *p* being true; yet a third way, *p* cannot become false without the destruction of *X*.[2]

It would go beyond the scope of this paper to discuss this debate further. I will continue to use the term "making true" by the lights of my own definition — but I will flag those points at which a truthmaker essentialist must diverge.

2 The Views

The anti-reductionists about relations include, influentially, Russell (1900, s. 10) (1937, s. 212–216) (1910) (1959, pp. 54–61) and in more recent times, Reinhardt Grossman (1983, ch. 3) and David Armstrong. (1997, pp. 4, 90–91, 120–122)

An anti-reductionist need not believe that *every* relational proposition is made true by an irreducibly relational fact. On the contrary, some relations seem to be systematically reducible — that is, propositions that express them are always made true by some monadic fact. These are the so-called "internal" relations, of which resemblance, and the various kinds of resemblance-in-a-respect are the paradigms: if my banana bears the same-colour relation to your lemon, it is in virtue of the fact that my banana is yellow and your lemon is yellow. This latter fact is monadic: it makes true the non-relational proposition that my banana is yellow and your lemon is yellow.

Another common example of internal relations are comparative relations: the proposition that Plato was taller than Socrates can be made true by the same fact that makes true the non-relational proposition that Plato had whatever height he actually had, and Socrates had whatever height he actually had.

To use what Keith Campbell calls "the intuitive picture of divine creation: if God makes an island A with so much rock, soil, etc. as to amount to 20 hectares, and subsequently, an island

[2] An intermediate definition is suggested in unpublished work by David Lewis. On Lewis's account of truthmaking, when we refer to something as a fact, we suggest different counterpart relations to those that we suggest when we refer to something in some other way. The former relations satisfy truthmaker essentialism, while the latter do not. In this way, Lewis is able to endorse truthmaker essentialism and hold that, eg. "This rose is red" is made true by the rose, without being drawn into the view that roses are essentially red.

B of 15 hectares extent, there is *nothing more* needing to be done to make A larger than B." (Campbell 1990, p. 103) In bringing about the purely monadic facts about the amounts of rock and soil, God has thereby brought it about that A is larger than B. There is no further fact that God must bring about.

Intuitively though, not all relations are like this: some are "external". Here the classic examples are the spatio-temporal relations. You could know all the monadic facts about Sydney and all the monadic facts about Canberra, it seems, (and thus the monadic conjunctive facts about Canberra and Sydney) without knowing that Canberra is south of Sydney. God could create each city, filling each with the requisite number of persons, cafes, etc. until every monadic fact concerning Sydney and Canberra was made true, but he would still not have brought it about that Canberra is south of Sydney.

It is these relations that the anti-reductionists hold to be made true only by irreducibly relational facts. Since their arguments are essentially reactive — they are objections to any attempt to show that a proposition ascribing an external relation can be made true by a monadic fact — we will first have to describe the reductionist attempts to reduce the relational facts that ascribe external relations.

The most traditional such attempt tried to assimilate the external relations to the internal ones, comparison and resemblance. Famously, this was the strategy of Leibniz. (Mates 1986, pp. 209–218) More recently, it has been revived by Keith Campbell. (1990, pp. 126–130) Campbell's approach requires that space-time is both "real" and "absolute", which unfortunately leaves his view open to empirical refutation (as Campbell himself points out).

Even if the problems with the Campbell view can be resolved, there is something unsatisfying about it. Even if, as a matter of fact, physics is as our metaphysical theory would like it to be, there remains the perfectly good metaphysical question of what the world would be like if this was not the case. The distinction between external and internal relations runs so deep that it seems a cheap trick to simply deny that there are any external relations. If we could be convinced of this, we would still like to know what it would be for there to be an external relation, and Campbell has no answer.

In any case, there is another way to be a reductionist about relations that allows the reconstruction of a distinction between internal and external relations. This is the "monistic theory of relations" that Russell (1937, s. 212) ascribes to F.H. Bradley.[3] On this view the fact that makes propositions ascribing external relations true is a monadic fact ascribing some property to the whole composed of the relata.

[3]Actually, Russell's Bradley is a considerable simplification of the original. Bradley himself seems to hold both the "monistic" view now under consideration and the Leibnizian view previously described. He goes to some length to distinguish them, and to endorse both, in the Appendix to *Appearance and Reality*: "are terms altered necessarily by the relations into which they enter? ... by this I do not mean to ask if there can be relations outside of and independent of some whole, for that question I regard as answered in the negative. I am asking whether, within the whole, and subject to that, terms can enter into further relations and not be affected by them.... And this question I am compelled to answer negatively." (1897, p. 514) For more discussion of Bradley's views on this issue, see Sprigge (1979). For the purposes of this paper I am interested in the position Russell ascribes to Bradley, rather than whatever views Bradley may actually have held.

This account has the advantage of some intuitive appeal: when God has created only Sydney and Canberra, he has not yet brought about the fact that Canberra is south of Sydney — but he must have brought about that fact by the time he has finished making Australia, for he has not finished making Australia until he brings about the fact that Australia is such that Canberra is south of Sydney.

We can also now afford a distinction between internal and external relations. Some relations are such that relational propositions asserting them are made true by monadic facts ascribing properties to the relata in the relational proposition. These are the internal relations: resemblance, comparative height, etc. Other relations are *not* like this — rather propositions asserting them are made true only by facts ascribing properties to the whole of the relata. Following Timothy Sprigge (1979, p. 164), let us call these "holistic relations". If the reductionist is right, all the external relations — spatio-temporal relations, causation, perhaps, and whatever other external relations we may discover — are holistic. The task facing the anti-reductionist about relations is to show that they cannot be.

3 Arguments for Anti-reductionism

What are the wholes that the theory of holistic relations refers to? Are they mereological? If so, what mereological principles are assumed?

I see no reason not to say that the "whole" of some objects is the mereological fusion of those objects — that object which, to put it sloppily, has just those objects as parts.[4] On classical mereological theories[5] any arbitrary non-empty collection of objects has such a fusion. But this is not uncontentious — many metaphysicians reject this part of classical mereology. (Simons 1987, pp. 108–112) Can advocates of such restricted mereologies accept the account of relations being offered here?

Yes: recall our earlier discussion of the "monotonicity of truthmaking". If the fusion of two things will do as a truthmaker for a relational proposition, so too will anything that has that object as a part. In the framework of classical mereology we can say that *any* whole which has the relata of a relational proposition as parts can make that proposition true. If you remove some of those wholes from your mereological ontology, the others can still do the work. Where a believer in "restricted composition" may have to differ from me is in what she takes to be the minimal truthmakers for propositions that ascribe an external relation.

At this point we can state the classic argument for anti-reductionism and against holistic relations as it is used by Russell, Grossman and Armstrong. External relations can be non-symmetrical, or even asymmetrical. "is south of" is a case in point: it is true that Canberra is

[4]This is sloppy because parthood is transitive, so that the fusion of A and B must have not only A and B as parts, but also the parts of A and B, and any other fusions of those parts. A less sloppy definition of fusion says that two things overlap iff they have a common part, and that the fusion of A and B is that thing that overlaps all and only those things that overlap A or B.

[5]For full expositions of 'classical' mereology, see Goodman (1951, pp. 42–51), Simons (1987, pp. 37–41).

south of Sydney, and false that Sydney is south of Canberra. But the fusion of Canberra and Sydney is symmetrical with regard to the two cities — the fusion of Canberra and Sydney *just is* the fusion of Sydney and Canberra. It seems that the holistic account has left something out: it leaves out the "direction" or "sense" of a relational fact.

As Russell put it:

> In order to distinguish a whole (ab) from a whole (ba), as we must do if we are to explain asymmetry, we shall be forced back from the whole to the parts and their relation. For (ab) and (ba) consist of precisely the same parts, and differ in no respect whatever save the sense of the relation between *a* and *b*. (1937, s. 215)

This argument is mistaken, as can be seen once we apply it to the definition of making true given above. Consider all the parts of Australia put together in such a way that Canberra is to the south of Sydney, and then all the same things put together in such a way that Sydney is to the south of Canberra. These are certainly two possible ways of putting together those parts. As Russell says, the whole that one gets by putting them together, is in either case, the same thing, Australia.

But it's wrong to say that the two ways of putting Australia together do not differ! They do differ — one is the way that Australia actually *is* put together, and the other is not. The way that Australia actually is is a property of Australia, and there is a proposition that ascribes this property to Australia. Were Canberra not to the south of Sydney, this proposition would not be true; and the fact that makes it true would have to be intrinsically different. This fact, by the definition of making true given above, would then make it true that Canberra is to the south of Sydney.

It might be objected that the two ways of putting the parts of Australia together cannot really produce the same object, Australia. This is because the two ways produce qualitatively different things, while one and the same thing cannot be qualitatively different from itself. If this is right, of course, Russell's argument doesn't work, because we are now forced to distinguish different wholes of the same parts. But I don't think it is right. Australia cannot be put together in two different ways at the same time, in the same possible world. The kind of identity that holds between the two Australias, one with Sydney to the south, one with Canberra, is identity over time or between possible worlds. Everyone who believes in change or contingency needs to make some sense of the same thing being qualitatively different at other times or other worlds. The reader is invited to plug in her favourite account of these matters.[6]

Another problem points to a different way that Australia could be put together, in which Sydney is placed to the south of Canberra, *and, in addition*, Sydney is given all of Canberra's properties, and vice versa. All Australians would call Sydney "Canberra" and Canberra "Sydney". If Australia were put together like this, would it be true that Canberra was south of Sydney? If not, there is trouble in identifying the fact that Canberra is south of Sydney with a fact about an

[6] On identity over time and across worlds, see Lewis (1986, ch. 4).

intrinsic property of Australia — for put together this way, Australia would be intrinsically just the way it actually is, but yet, the relationship between Canberra and Sydney would be different.

There is a problem for truthmaker theory here, but it is not any problem to do with relations — it is, rather, the problem posed by haecceitism. Haecceitists hold that which actual individual a given possible individual represents does not supervene on any qualitative (even extrinsic) properties of that possible individual. So, for example, they can hold that it would be possible for Canberra and Sydney[7] to swap all their properties but retain their 'identities', in the way described above.

Some philosophers have been tempted to reject haecceitism for reasons of difficulty in fitting it into a systematic metaphysics of modality. (Lewis 1986, pp. 220–248) If we take that route, this is no problem for us. We can simply deny that it makes sense to swap all of the properties of Canberra and Sydney without thereby swapping Canberra and Sydney themselves.

Suppose, on the other hand, we don't do that, but instead embrace haecceitism. In that case, we need an account of truthmakers that reflects our views of the way the world might be different. Consider the fact that Canberra is small. If we accept haecceitism, we think that it is possible that Canberra should have all its properties swapped with Sydney. It would no longer be true that Canberra is small. It appears, however, that the world would be *intrinsically* just the way it actually is. The world, it will seem, does not make it true that that Canberra is small, because the world might be just as it is and Canberra not be small. Because of the monotonicity of truthmaking, it follows that the world does not include a truthmaker for "Canberra is small". To fully resolve these kinds of problems would take us beyond the scope of this paper[8] — the point to note is that the problem is nothing to do with relations, but rather to do with the possibility of haecceitistic differences between duplicates.

The foregoing arguments assume my definition of making true, that the truth of a proposition is intrinsic to the fact which makes it true. Does it still work on the "truthmaker essentialist" definition, that the truth of a proposition is essential to the fact which makes it true? Yes: we just need it to be the case that the fact that Australia is such that Canberra is south of Sydney is distinct from Australia itself. Australia could exist even if Canberra was not south of Sydney, so it's not a plausible candidate for this fact, on the assumption of truthmaker essentialism. This is generally the case with truthmaker essentialism — it makes it hard to identify facts with concrete particulars.

If we abandon the nominalistic project of identifying facts with things, there is no problem in affirming truthmaker essentialism. Suppose, for example, we have an Armstrong-style ontology of states of affairs, having objects and properties as constituents. One state of affairs we might have is the states of affairs that brings together Australia with the property of being such that

[7] For a defense of this kind of property swapping, see Chisholm (1967).

[8] One way to deal with the problem posed for truthmaker theory by haecceitism is to extend the concept of "duplication" that was used in the definition of truthmaking. We should say that X makes p true iff a superduplicate of X cannot exist without p being true; where a superduplicate of X is a duplicate of X that is also not haeceitistically different to X (for example, by being Canberra rather than Sydney, or by having Canberra rather than Sydney as its largest city).

Canberra is south of Sydney. If we want to hang onto truthmaker essentialism, we can hold that this state of affairs cannot co-exist, even as some other state of affairs, with an Australia in which Canberra is not to the south of Sydney.

4 Arguments for Reductionism

What an anti-reductionist wants to say is that the irreducibly relational facts are constituted in a different way to the monadic ones. For example, in Armstrong, the relational states of affairs bring together two or more objects with one property (a relation), where, if the relation is non-symmetric, the objects fit into different "relation places" in the state of affairs. (1997, pp. 121–122) Compare this with the reductionist account in terms of states of affairs that I described above: there a relational state of affairs would bring together a property with just one object, the whole composed of the two objects which are directly constituted into the state of affairs in Armstrong's actual anti-reductionist account.

It seems to me that an anti-reductionist account of relational facts like Armstrong's cannot really be fully described without falling back into a version of reductionism. The reason is that the vocabulary of the anti-reductionist metaphysics itself gives us non-relational propositions that describe the structure of the supposedly irreducible relational facts. For example, Armstrong writes of "the *internal* difference of organisation that exists between *a*'s loving *b*, and *b*'s loving *a*" (1997, p. 121)

If there is such an internal difference of organisation, we can introduce non-relational properties that apply to states of affairs in virtue of their internal organisation — in the same way that I introduced non-relational properties that apply to Australia in virtue of its internal organisation. Suppose there is such a thing as the state of affairs of Canberra's being south of Sydney, and that it is organised in the way in which Armstrong holds that irreducible states of affairs are, complete with "relation places" and "internal differences of organisation". For convenient reference, let's call this state of affairs "Kim", and its internal organisation "kimity". There's a perfectly good proposition that Kim has kimity, which, in fact, Armstrong would assert, were we to ask him to explain his metaphysics of irreducibly relational facts.

Moreover, it is Kim that makes this proposition true. For kimity is an intrinsic (and, if you believe truthmaker essentialism, essential) feature of Kim. So, in fact, Kim is not an irreducibly relational fact, as it makes true the non-relational proposition that Kim has kimity. If truthmaker essentialism is affirmed, there is an even more powerful argument here. In that case, Kim could not exist without having kimity. So Kim is simply the fact that Kim exists, which is very clearly a monadic fact.

There is nothing special about the Armstrongian framework that I have assumed here. Any anti-reductionist will sooner or later have to tell us what she believes about the internal organisation of irreducibly relational facts — and then an analogous argument will become available.

Perhaps I have made things too difficult for anti-reductionism in defining an irreducibly rela-

tional fact as one which makes no non-relational propositions true. In the light of the argument above, the anti-reductionist might reasonably be allowed to revise this definition.

Recall from the first section that it would be question-begging to appeal to a difference in ontological structure between irreducibly relational and monadic facts (for example, by saying that a irreducibly relational fact is one that involves a two-place universal, or contains more than one particular). The existence of irreducibly relational facts is supposed to be give us a reason for believing in those differences of structure.

We might accept the following amendment though: perhaps some propositions are truer pictures of the facts that make them true than others. "I do this for your sake" and "The taxi stopped with a lurch", for example, might be less ontologically perspicuous pictures of the facts that make them true than paraphrases of those propositions that eliminate the seeming ontological commitment to sakes and lurches. Similarly, "Australia is organised the way it is" might be a less ontologically perspicuous way of describing Australia than "Canberra is south of Sydney", because it does not mention the south-of relation between some of Australia's parts. Let's say that an irreducibly relational fact is one that does not make true any fully ontologically perspicuous non-relational proposition.

This seems reasonable, but it does not affect my argument. I do not see any way that "Kim has kimity" falls short of full ontological perspicuity (once it is explained what Kim and kimity are). The non-relational propositions to which I am appealing are those of the metaphysics believed by the anti-reductionists themselves — what could be more ontologically perspicuous (by their lights) than that?

5 Conclusion

It is embarrassing to be in the position of presenting one's own view as a truism, but there it is: I cannot see how anti-reductionism about relational facts can be made coherent. Perhaps the appeal of anti-reductionism can be explained sociologically — with enemies like F.H. Bradley you don't need friends — but it seems hard to find metaphysical merit in it.

This result will of course be of intrinsic interest to the truthmaker theorists, who still mostly, like Armstrong, hang on to anti-reductionism, or like Campbell, part with it only with difficulty.

Finally, some light has been shed on the origins of analytic philosophy. Russell's argument against Bradley was mistaken. This tends to undercut the widespread view that Russell's rejection of Bradley's views about relations was the decisive break that issued in analytic philosophy as we know it. Rather, if we apply my argument against anti-reductionism to Russell himself, we see that it is hard to distinguish the most coherent form that his theory of relational facts could take[9] from the theory he ascribes to Bradley.

[9] A fully worked out Russellian account of relational facts would presumably be similar to Armstrong's — at any rate, Armstrong takes his cue from Russell. (1997, pp. 3, 90–91)

It is no coincidence, I think, that it is an argument of Bradley's — the regress of relations — that is best used to motivate an ontology of facts, as against a substance-attribute metaphysic. (Fox 1987, pp. 195–196)[10] (Olson 1987, pp. 51–52) Analytic metaphysics has a lot to learn from its roots in Hegelian idealism.

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[10] Fox says "Sometimes here, people have started on a regress" (1987, p. 195). "People" are obviously Bradley here: compare the version of the regress at (Bradley 1897, p. 18)

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